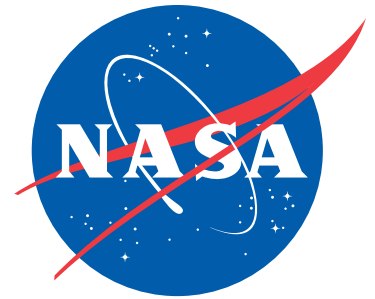


Spaceport News

John F. Kennedy Space Center - America's gateway to the universe



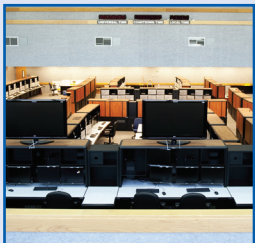
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NuSTAR reaches intended orbit

*41st Pegasus
rocket launch
begins mission
without a hitch*

By Steven Siceloff
Spaceport News

The Nuclear Spectroscopic Telescope Array, known as NuSTAR, is going through early mission preparations in orbit following a flawless launch June 13, aboard an Orbital Sciences Pegasus rocket.

The scientific spacecraft soared into space from Kwajalein Atoll in the Marshall Islands at noon Eastern time to start a mission that is expected to show astronomers more details about black holes and other structures in the universe.

Fifty-five members of the KSC-based Launch Services Program, or LSP, joined the Orbital launch team on a flight to Kwajalein in the western Pacific Ocean to oversee the Pegasus/NuSTAR flight. A team at Kennedy also played a part in the operation.

"It was a terrific day for the Launch Services Program," said Tim Dunn, assistant launch director. "We're ready to get into the science portion of the NuSTAR mission."

The air-launched Pegasus performed well during the launch, from dropping away from its L-1011 aircraft, to igniting its three stages on



NASA/Randy Beaudoin, VAFB

This Orbital Sciences Corp. Pegasus XL rocket carrying NASA's NuSTAR spacecraft was launched at noon June 13, dropping away from the L-1011 Stargazer aircraft and racing into space. Pegasus was released at an altitude of 39,000 feet, 117 nautical miles south of the Kwajalein Atoll at a latitude of 6.75 degrees north of the equator. NuSTAR spacecraft separation from the rocket occurred 13 minutes, 14 seconds after deployment from the L-1011. For more on the NuSTAR mission, click on the photo.

*"The performance
of the Pegasus
launch vehicle was
right on the money."*

Tim Dunn,
NuSTAR assistant
launch director

time and then separating from NuSTAR.

"The performance of the Pegasus launch vehicle was right on the money," Dunn said.

The spacecraft's solar array unfurled minutes after reaching orbit, and it communicated with ground controllers through NASA's space communications

network. The spacecraft will deploy its 32-foot-long boom about a week after launch. Observations will begin following checkouts and calibrations of the optics that will focus on high-energy X-rays.

Once operational and making observations, the NuSTAR spacecraft is expected to reveal details of black holes and exploded stars previously obscured by dust or other objects.

The launch was the first of the year for LSP and begins a cycle that is expected to include three more flights this year. The next up is the Radiation Belt Storm Probes, or RSBP, targeted to launch Aug. 23 on a United

Launch Alliance Atlas V rocket from Cape Canaveral Air Force Station. The flight will see twin probes survey the radiation belts around Earth.

After that, another Pegasus is set to loft the Interface Region Imaging Spectrograph, or Iris, spacecraft into orbit to study the sun's processes and solar wind. That launch is targeted for Dec. 1 from Vandenberg Air Force Base in California.

The team then will turn its attention to an Atlas V due to deliver NASA's latest Tracking and Data Relay Satellite, known as TDRS-K, to orbit. That launch also will take place at Cape Canaveral Air Force Station.

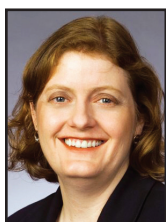
Training program emphasizes space station utilization

By Anna Heiney
Spaceport News

Space enthusiasts and NASA employees are accustomed to hearing questions and concerns from people who are unfamiliar with the scientific and economic benefits of the International Space Station.

Dr. Julie Robinson, ISS program scientist at Johnson Space Center in Houston, hears them, too. To better help agency employees spread the word about benefits already realized from the assembly of the International Space Station, Robinson developed the "ISS Ambassador" training program. On June 4 and 5, she shared her knowledge and enthusiasm with employees at Kennedy Space Center.

"Often, in a social setting, I meet someone who knows I work for NASA, and they say, 'Oh, I'm so sorry to hear about NASA. What are you going to do now?'" Robinson said. When asked if any-



Robinson

one else in the room had had a similar experience, most of those seated in the auditorium raised

their hands.

"That is an amazing opportunity," Robinson explained, "because the next thing you can say is, 'I've got a lot to do, and it's really exciting, and here's why.'"

After a full decade of construction, the outpost was completed in 2011, kicking off the "utilization era," a period in which science and technology research have become the primary focus of station activities.

Flying more than 200 miles above Earth's surface, the 357-foot-long orbit-



This picture, recorded by one of the Expedition 31 crew members aboard the International Space Station, features Aurora Australis with star streaks while the vehicle was over the South Pacific Ocean. For more on space station research and technology, click on the photo.

ing research facility is an engineering marvel, home to the only U.S. National Laboratory in a microgravity environment. With six resident crew members representing a variety of nations, ground teams around the globe stand ready to support station activities on a daily basis.

"The 24/7 ongoing human space operations are really the great engineering achievement of the last decade," Robinson said.

Until the development of the space station, humans had never undertaken a project like it. The facility far surpasses previous space stations in both size and scope.

Never before had multiple nations collaborated so closely on such an effort, bridging language barriers and engineering cultures for a common goal.

One by one, components built around the world were lofted into space and successfully added to the station, proving it was possible to coordinate such a massive, global engineering project without requiring

hardware fit-checks on the ground.

The five official partner agencies involved in the station are the Canadian Space Agency (CSA), European Space Agency (ESA), Japan Aerospace Exploration Agency (JAXA), NASA and the Russian Federal Space Agency (Roscosmos).

"The ISS partnership, by being international in scope, is the first time that, instead of a nation doing exploration all by itself for its own economic gain, humans have banded together to do something even bigger that no one nation could do alone," Robinson said.

"And that's exciting because the endeavor is committed to the advancement of all humankind, not just a single nation."

These achievements serve as a model for future cooperation in the development of exploration missions, and the utilization era that's just beginning holds the promise of scientific discovery and economic benefits for the entire world.

Trying to carry out research during the station's

construction phase was not easy, though.

"We were basically trying to do surgery while someone was building the operating room," Robinson recalled.

By fall 2011, the orbiting laboratory already had served about 1,300 scientists by hosting more than 1,200 experiments conducted by researchers in more than 60 countries.

Scientific and technological advancements discovered or developed aboard the space station serve as an economic engine. Robinson

pointed out that science doesn't work at the same pace as engineering: It takes two to five years for new findings to be peer-reviewed and ready for publication.

"Usually, with a discovery, you don't know what economic benefit that's going to generate right away," Robinson said, adding that over time many discoveries lead to valuable new information, or products, services and other economic benefits right here on Earth.

Research results are findings that stem from specific studies in which scientists designed an investigation seeking specific knowledge. A spinoff, on the other hand, is a technology that starts out as a solution to a problem or need in space exploration, but is then adapted and applied for use on Earth.

Rather than competing for priority, research and exploration really are two sides of the same human advancement that drives our economy, Robinson said.

"Over the next decade, that's our goal: to get the most research, new knowledge, new applications for exploration, and new benefits back here on Earth, out of that laboratory."



NASA

Expedition 30 Commander Dan Burbank, left, uses the Health Maintenance System Tonometry payload to perform an intraocular pressure test on Flight Engineer Don Pettit in the International Space Station's Destiny Laboratory on April 6. The activity was supervised via live Ku-band video by medical ground personnel. To follow "A Lab Aloft," the station blog, click on the photo.

Spaceport goals take shape in revamped firing room

By Steven Siceloff
Spaceport News

The firing room of the future isn't confined to the future anymore. An extensive renovation of everything from the consoles in the Young-Crippen Firing Room to the computer servers in the Launch Control Center and Launch Pad 39B and all the cables and networks connecting them will produce a nerve center for rockets and spacecraft befitting a national spaceport.

The room will be as plugged-in to the status and preparations of vehicles in facilities of Kennedy Space Center as it was for space shuttles, but the infrastructure making the connections is decades more advanced.

"We're building upon what was there for shuttle and taking it to the next level," said Stephen Cox, the element operations manager for command and control.

The renovations in the firing room that are part of the Spaceport Command and Control System, or SCCS, are proceeding at the same time the Ground Systems Development and Operations Program makes similarly grand upgrades at Launch Pad 39B and in the Vehicle Assembly Building.

The goal is to install the devices and infrastructure for a launch center that can host several kinds of rockets at the same time. That is a revolutionary undertaking since previously all processing and launch systems were custom-fit to a specific vehicle, such as the space shuttle.

Officials leading the efforts opened the doors on the new facilities recently to center employees. The feedback was very positive, said Greg Clements, chief of Kennedy's Control and



NASA/Dimitri Gerondidakis

Curtis Williams, a design engineer, details some of the upgrades to consoles in Kennedy Space Center's Young-Crippen Firing Room on May 31. For more on the Ground Systems Development and Operations Program, click on the photo.

Data Systems Division.

"For many people, they had not seen the new Firing Room 1 equipment and command and control capabilities for several years," Clements said. "For others, it had been a year or two. Many of the comments centered on the fact that the attendees and stakeholders better understand that we are working on a capability that is different from Constellation, and they are looking forward to seeing additional progress over the next several months."

One of the good things is that all of the facilities needed to process and launch already are in place, so it's a matter of retrofitting networks and support equipment, not building whole new structures.

With small-screen monitors inside blue metal boxes replaced by contemporary cabinets and modern computers and monitors, the firing room bears little resemblance to the original control room that oversaw launch processing and lift-off operations for shuttles.

The changes go far be-

yond cosmetic appearances. The additions have at their heart the goal of providing options for the control center. Instead of a given seat being suited for only one task, whoever sits down at the computer will be able to call up the appropriate data set for the work they are doing. On launch day, that could mean every available console is staffed with people dedicated to the liftoff. But afterward, when another vehicle or two is being processed for launch, the same consoles can be split to oversee the different operations.

"The new concept that we are working on is that all services are at that console. They can use that glass real estate the best way they see fit," said Michael Van Houten, SCCS deputy project manager.

The workstations are off-the-shelf machines similar to the computers people have at home. The servers are the same ones found in many banks and commercial data centers.

"We very much take advantage of the prevailing

commercial markets in our computer usage," Clements said.

Cables and other elements of the antiquated infrastructure have been pulled and replaced with new materials that, in many cases, provide substantially improved performance.

The improvements include pulling a bundle of wiring that transmitted images from a single camera to make way for a tiny fiber-optic cable that carries the signals of more than 570 cameras from the

launch pad to the control room.

Similar innovations can be found throughout the upgrade, including at the facilities at Launch Pad 39B, where rooms built about 45 years ago look brand-new.

At this point, there are a number of new rocket designs in different stages of development that could call the revamped Kennedy facilities home. The point of the renovations is to be ready to process and launch any of them.



NASA/Dimitri Gerondidakis

Improvements were made in the control rooms at Launch Pad 39B to host a variety of different rockets and spacecraft, employees learned May 31.

Scenes Around Kennedy Space Center



NASA

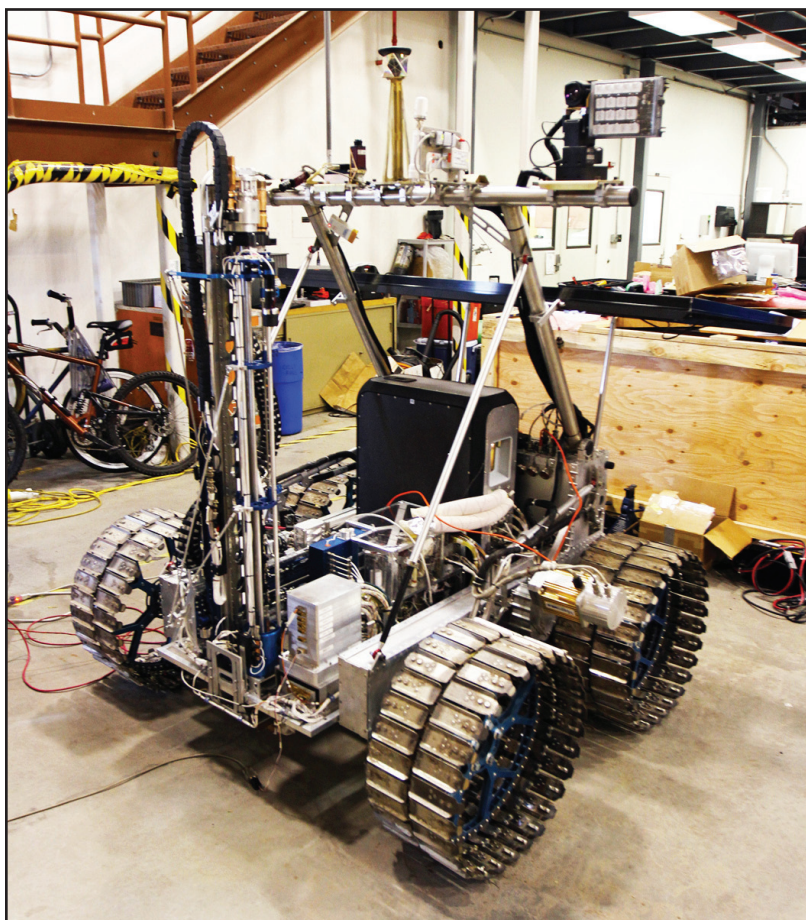
A team from Kennedy Space Center successfully tested the Mobile Launch Control System at NASA's Johnson Space Center in Houston to show it would work with the Orion spacecraft systems under development. The evaluation met all the test objectives along with additional objectives. The situations covered in the test included ascent and high-speed re-entry. Orion's first test flight, which will not include any astronauts, is to launch in 2014. For more on the Orion Multi-Purpose Crew Vehicle, click on the photo.



NASA/Dimitri Gerondidakis

CLICK ON PHOTO

United Space Alliance forward spacecraft operator Bill Powers locks the hatch of space shuttle Endeavour's airlock for the final time during processing for the shuttle's retirement in Orbiter Processing Facility-2 at Kennedy Space Center on June 12. Endeavour is being prepared for public display at the California Science Center in Los Angeles. Its ferry flight to California is targeted for mid-September. For more information, click on the photo.



NASA/Cory Huston

The NASA payload is installed on the prototype rover Artemis Jr. for NASA's Regolith and Environment Science and Oxygen and Lunar Volatile Extraction, or RESOLVE, project in a test facility behind the Operations and Checkout Building at Kennedy Space Center on June 11. The cylindrical structure at left is the drill. The drill and rover were provided to NASA by the Canadian Space Agency. The NASA payload is designed to prospect for water, ice and other lunar resources. RESOLVE also will demonstrate how future explorers can take advantage of resources at potential landing sites by manufacturing oxygen from soil. NASA will conduct field tests in July outside of Hilo, Hawaii, with equipment and concept vehicles that demonstrate how explorers might prospect for resources and make their own oxygen for survival while on other planetary bodies. For more information, click on the photo.



For NASA

NASA General Counsel Michael C. Wholley, right, presented NASA's 2012 Attorney of the Year Award to Kennedy Space Center's Joe Batey during a ceremony May 23 in Cambridge, Md. Two other members of the legal team at Kennedy -- Tracy Lee Belford and Penny Chambers -- were part of the multi-center team winning the 2012 NASA Legal Team Award.

ISU encourages cooperation with international flair

By Stephanie Covey
Spaceport News

What makes a strong program? Is it diversity of thought, talent and backgrounds -- or a strong network that can solve problems with ease? A successful program is all of this and more, and that is why Kennedy Space Center is excited to co-host the International Space University's 25th Annual Space Studies Program (SSP).

"NASA supports the university's mission and goals of SSP to globally collaborate on space initiatives," said Dicksy Hansen, chief of the NASA Public Services Office and Kennedy core team lead for ISU. "SSP enhances Kennedy's standing as a leader in the international space community and promotes our future direction, existing capabilities and talented work force."

This year, Kennedy and the Florida Institute of Technology are co-hosting 125 post-graduate university students, experts and professionals in the space industry from 31 countries to encourage international cooperation on space-related projects.

The countries include Canada, Israel, South Africa, Greece and the United Kingdom.

NASA Deputy Administrator Lori Garver was the keynote speaker of the opening ceremony June 4. Garver was followed by Center Director Bob Cabana who officially welcomed the participants on behalf of Kennedy.

The participants have a variety of expertise ranging from art, education, social networking and engineering, but their love of space and science continues to bring them together.

Sanja Scepanovic, a stu-



CLICK ON PHOTO

NASA/Kim Shiflett

Entertainment during the opening ceremonies June 4 for the International Space University's 25th annual Space Studies Program session at the Florida Institute of Technology in Melbourne, Fla., was provided by Jim Sawgrass and the Deep Forest Native American Indian Program dancers. The nine-week intensive course is designed for post-graduate university students and professionals during the summer. The program is hosted by a different country each year, providing a unique educational experience for participants from around the globe. Kennedy Space Center and Florida Tech are co-hosting this year's event, which runs through Aug. 3. This year, there are about 125 participants representing 31 countries. For more information, click on the photo.

dent from Montenegro, said her passion for space programs stems from watching videos of NASA missions as a child. Even though her country does not have a space program, she always dreamed of working with a space agency like NASA.

The program encourages participants to share their

knowledge and experiences to solve complex problems in the space industry. Throughout the nine-week program, lectures from veteran Kennedy employees will encourage international space efforts and promote future partnerships and cooperative agreements.

Events taking place at Ken-

neddy this summer include an international astronaut panel at the visitor complex, tours of the center with subject matter experts, and access to Launch Complex 39A for the Student Rocket Launch.

Marc Labriet, a U.S. participant, has always been interested in space and is very excited to learn

at Kennedy, which he calls "the birthplace of the U.S. space program." Labriet is a technical project manager working with software and is hoping to transition into an aerospace career through the program.

"The Space Studies Program will give me the opportunity to work with engineers from all over the world who are as passionate about space as I am," Labriet said.

Ames is the only other NASA center to host the event, which created challenges unique to a government facility.

By partnering with Florida Tech, students receive long-stay housing accommodations on a university campus, while visiting world-class space facilities, and learning from subject matter experts drawing from 50 years of experience.



NASA/Dimitri Gerondidakis

Professor Angie Bukley, dean and vice president for Academic Affairs, International Space University, addresses the audience during opening ceremonies for the university's 25th annual Space Studies Program session at the Florida Institute of Technology in Melbourne, Fla., on June 4. Seated from left are Anthony J. Catanese, president of Florida Tech; Kennedy Space Center Director Bob Cabana; Bukley; and Dr. Guy A. Boy, chair of the Space Studies Program's local organizing committee.

Research leads students to Kennedy's high-tech labs

By Cheryl Mansfield
Spaceport News

While the Kennedy Space Center is recognized worldwide as NASA's launch center, a group of high school students recently learned that there's more to the center than just launching rockets. Twenty-six honor students in chemistry and biology and their teachers got a chance to visit some high-tech labs at Kennedy as part of an effort to encourage students in the areas of science, technology, engineering and math, known as STEM.

"In addition to our launch and landing operations, we also do research and development, engineering development, science and technology," said NASA materials engineer Dr. LaNetra C. Tate during her welcome address to the group.

The tenth- and eleventh-grade students from Terry Parker High School in Jacksonville, Fla., visited a number of vastly different labs during their one-day tour. First stop was the Space Life Sciences Lab facility where they visited labs specializing in granular physics and regolith operations, electrostatic and surface physics, and life support and habitat systems. Located in Exploration Park just outside the Kennedy gates, the Space Life Sciences Lab was developed in a cooperative effort between NASA, Space Florida and the state of Florida. Experiments from these labs have flown aboard the space shuttle and the International Space Station.

Inside the Electrostatics and Surface Physics Lab, Dr. Carlos Calle demonstrated a process for keeping spacecraft, equipment



NASA/Jim Grossmann

Dr. Phil Metzger demonstrates an experiment to study the physics of granular materials to students in the Granular Physics and Regolith Operations Lab at the Space Life Sciences Lab facility on May 14. The 26 honor students in chemistry and biology and their teachers got a chance to visit a number of high-tech labs at Kennedy Space Center as part of an effort to encourage students in the areas of science, technology, engineering and math. The 10th- and 11th-grade students from Terry Parker High School in Jacksonville, Fla., visited a number of vastly different labs during their one-day tour. The group's visit to Kennedy was hosted by the Education Office as part of a nationwide effort by the National Lab Network to help introduce the nation's students to science careers.

and even spacesuits free of dust when exploring dusty surfaces like those found on the moon or Mars. While in the Granular Physics and Regolith Operations Lab, Dr. Phil Metzger explained their work, including how they use simulants to replicate lunar dust in their experiments.

During the students' tour of the Life Support and Habitation Systems Lab, Metzger demonstrated some research for long-duration space travel. "One of the approaches we've been looking at is growing plants," he said, explaining that plants are not just for food, but that they also use carbon dioxide and produce oxygen -- a process that could be beneficial inside a spacecraft. "We also look at waste recycling, both for solid and wastewater systems, because you're going to have to recycle all those things. You have to think about living in a very tightly closed environment," he added.

The students then moved

inside the Kennedy gates to the Operations and Checkout Building. Known as the O&C, the building continues to play an integral part in present and future space exploration as it has since the 1960s, housing many facilities over the years including the astronaut crew quarters. The

students' visit to the facility encompassed demonstrations in the applied physics and cryogenics labs, as well as a walk-through of the prototype lab.

The group's visit was hosted by the Kennedy Education Office as part of a nationwide effort by the National Lab Network to

help introduce the country's students to careers in the STEM fields. "We believe we can make a stronger impact and inspire students by involving them in activities as an extension of their classroom," said Beth B. Smith, informal education specialist.



NASA/Jim Grossmann

Students and their teachers get some hands-on experience inside the applied physics lab in the Operations and Checkout Building on May 14.

Wheeler to present to American Society for Horticultural Science

By Linda Herridge
Spaceport News

Dr. Ray Wheeler, the lead for advanced life support activities in the Surface Systems Division of Kennedy Space Center's Engineering Directorate, was selected as the 2012 Benjamin Y. Morrison Memorial Award Lecturer by the Agriculture Department's Agricultural Research Service (ARS).

"This year's notice was a real surprise and I'm honored to receive the nomination," Wheeler said.

Wheeler will present his lecture during the American Society for Horticultural Science annual meeting July 31 to Aug. 3 in Miami. He will speak to his peers in the industry with a presentation titled "Controlled Environment Research: A Forgotten Discipline with Emerging Opportunities."

Director of Engineering Pat Simpkins said Wheel-



Dr. Ray Wheeler checks on hydroponically grown lettuce in the Biomass Production Chamber at Hangar L in 1992, prior to the move to the Space Life Sciences Laboratory at Kennedy Space Center.

er's selection for this award is further indication of his excellence in the discipline and Kennedy's unique place in the area of space life sciences and plant physiology.

"He's worked hard to establish this capability in the space industry for Kennedy, and we all applaud this great accomplishment," Simpkins said.

The ARS established the lecture in 1968 to honor the memory of Benjamin

Y. Morrison (1891-1966). Morrison was the first director of the U.S.D.A.'s National Arboretum in Washington, D.C., and a pioneer in horticulture.

According to ARS lecture coordinator Kim Kaplan, the lecture award recognizes scientists who have made outstanding contributions to horticulture and other environmental scientists.

"Or for encouraging the use of these sciences for the production of horticultural

crops or to preserve and enhance natural beauty of landscape plants," Kaplan said.

Kennedy's Chief Technologist Karen Thompson said Wheeler is acclaimed throughout NASA as the top scientist for plant physiology.

"Wheeler also is recognized worldwide for his expertise," Thompson said. "This award is yet another testament to his accomplishments and is truly a high honor."

For his lecture, Wheeler will receive an honorarium, a medallion and a plaque.

Wheeler began his career with NASA at Kennedy in 1988. His work at the Space Life Sciences Lab focuses on lighting and carbon dioxide concentration effects on plant growth and development, and the use of hydroponic techniques for production systems.

Wheeler is the author or co-author of more than 200

scientific papers, and he has presented more than 60 times since 1989. He is the recipient of a NASA Exceptional Scientific Achievement Medal.

He holds or has held adjunct or courtesy appointments at the Florida Institute of Technology, the University of Florida, the University of Central Florida, Utah State University, Cornell University, Texas A&M University and the University of Arizona.

Wheeler also serves as a vice chairman for the Life Sciences Commission on the International Committee on Space Research, or COSPAR.

Wheeler said, "During my presentation, I hope to point out the commonalities between using crops for life support systems in space and emerging terrestrial interests in controlled environment agriculture and vertical farming concepts."

Complex problems solved in Technical Interchange Meetings

By Rebecca Regan
Spaceport News

NASA's Commercial Crew Program is turning to a number of strategies to work through the complex challenges of engineering a new generation of rockets and spacecraft. Technical Interchange Meetings, for example, are providing program leaders an opportunity to gain a comprehensive understanding for the vehicles that private industry are designing and developing on their own before the agency's astronauts will climb aboard.

Called TIMs for short, the meetings bring together a rather small group of experts to do just what its namesake calls for, exchange technical information. Alliant Techsystems Inc., or ATK, which is developing its Liberty launch vehicle under NASA's Commercial Crew Development Round 2 (CCDev2) activi-

ties, most recently held a TIM on the software that controls all the avionics components, commanding them to work together to control the launch vehicle.

"A TIM is really just an opportunity to fill in any holes associated with a review of these systems," said Ken Tenbusch, the NASA partner manager working with ATK. "We might see something and both teams kind of recognize, hey, maybe we just need to talk this out and vet it out a little bit further with some of our technical teams. So, what it does is it just opens up that line of communication back and forth."

The software TIM was the latest in a series for ATK under CCDev2. Earlier TIMs involved the company's planned approach to certifying the rocket's launch abort system and providing analysis of thrust oscillation to show the company could reduce the acceleration astronauts

would experience during launch compared to ATK's Ares I rocket design, which has a similar architecture to Liberty.

"It's kind of like trying to determine why your car might be getting 20 miles of gasoline per gallon instead of 30," said James Burnum, NASA's deputy partner manager working with ATK. "It may take four or five experts to pull together the full story, someone who knows about the engine, someone who knows about the fuel, someone who knows about tires."

Typically the meetings take place in an informal setting with a range of 15 to 30 experts. On the NASA side, the program is able to pull from a wide range of talent, including safety and integration engineers or teams working on the Space Launch System, the heavy-lift rocket designed to expand human presence beyond low Earth orbit.

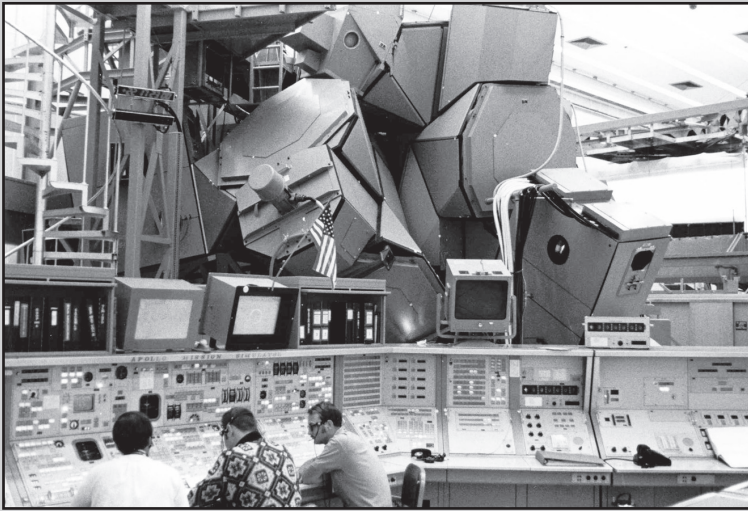
Tenbusch said these meetings are nothing new to the spaceflight industry. In fact, while Tenbusch worked with the space shuttle's external fuel tank and solid rocket boosters as an operations manager he participated in dozens of TIMs. The major difference, he said, is the wealth of information that's being shared.

"During shuttle, both sides of the house already knew the answers and we would just get together to make sure we fully understood how we got to those answers," Tenbusch said. "With commercial crew, we've gone a little bit further, we've learned a little bit more about the company's systems and subsystems because they're bringing more information to the table."

All of NASA's CCDev2 partners are giving the agency an in-depth look at their vehicles during the

In celebration of Kennedy Space Center's 50th anniversary, enjoy this vintage photo . . .

FROM THE VAULT



NASA file/1970

This view of personnel sitting at consoles that controlled the lunar module training simulator located in the Flight Crew Training Building was taken July 22, 1970.

Former engineering development director receives alumnus award

By **Brittney Longley**
Spaceport News

Former NASA Kennedy Space Center Engineering Development Director Walter T. Murphy received a Distinguished Alumnus Award on April 21, after being nominated by his classmates from Hendrix College in Conway, Ark.

The Distinguished Alumnus Award is given by the Alumni Association of Hendrix College to former graduates who have distinguished themselves in their vocations, service to humanity and service to the college.

Murphy, who worked for NASA for 34 years, was chosen by his peers and selected by the Hendrix Alumni Board.

"Walt was selected because of his lifetime achievements," said Pamela Owen, member of the alumni group.

Murphy spent eight years at NASA's Johnson Space Center in Houston before transferring to Kennedy in 1973.

"I was totally surprised to receive this," said Murphy, who graduated from Hendrix College



NASA file/1990

Walter T. Murphy, shown here in 1990, won a Distinguished Alumnus Award on April 21. Murphy was nominated by his classmates at Hendrix College in Conway, Ark.

with a bachelor of Science in physics in 1961.

"This is a very prestigious award to be honored with."

After retiring from NASA in 1997, Murphy continued working at Kennedy for 10 years as a contractor for The Boeing Company and United Space Alliance.

"I was blessed with math and engineering," Murphy said. "Having a background in physics helped and being at NASA made all the difference."

Looking up and ahead . . .

* All times are Eastern

2012

Targeted for June 18

Launch/CCAFS (SLC-41): Atlas V (AV-203), NROL-38

Launch window: Classified

June 28

Launch/CCAFS (SLC-37B): Delta IV-Heavy, NROL-15

Launch window: 5:30 to 10:30 a.m.

Aug. 2

Launch/VAFB (SLC-3E): Atlas V (AV-033), NROL-36

Launch window: TBD

Third Quarter

Launch/Wallops Flight Facility (Launch Pad 0A): Orbital Sciences Antares test flight

Launch time: TBD

Aug. 23

Launch/CCAFS (SLC-41): Atlas V-401, Radiation Belt Storm Probes (RBSP)

Launch window: 4:08 to 4:28 a.m.

No earlier than Sept. 20

Launch/CCAFS (SLC-37B): Delta 4, GPS 2F-3

Launch window: TBD

From **TIM**, Page 7

joint venture of establishing routine access to and from the International Space Station in a few years.

This week, for instance, Space Exploration Technologies, known as SpaceX, hosted a TIM at its headquarters in Hawthorne, Calif., to talk about the current design state of the crewed version of its Dragon capsule. Future interchange meetings could focus on topics such as abort aerodynamic loads and performance,

and humidity and carbon dioxide removal systems

Tenbusch said the companies also are welcoming the constructive feedback NASA provides at these meetings based on its decades of human spaceflight experience and the tough lessons it has learned about keeping crews safe.

"These companies want to be safe," Tenbusch said. "They want to be successful. They have to be successful, and there's been a lot of ground gained from these TIMs."



John F. Kennedy Space Center

Spaceport News

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